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Zimbabwe Biofuels Situation

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Report Highlights:
The Zimbabwean Government has proposed a new biofuels policy seeks to promote the use of sorghum and oilseeds as biofuels feedstocks, in addition to jatropha and sugarcane that is promoted under the current policy. The overall objective of Zimbabwe's biofuels program is to produce at least 10 percent of the country's liquid fuel requirements by 2017. The policy on biofuels, once approved, is expected to lay the framework that will regulate and promote investment, production, marketing, and the use of biofuels.

Executive Summary:A draft biofuels policy was recently submitted for ministerial approval and should guide the further development of the biofuels industry in Zimbabwe. The new biofuels policy seeks to promote the use of sorghum and oilseeds as biofuels feedstocks, in addition to jatropha and sugarcane that is promoted under the current policy. The overall objective of Zimbabwe's biofuels program is to produce at least 10 percent of the country's liquid fuel requirements by 2017. Currently, Zimbabwe imports all of its fuel, estimated at about 1.8 billion liters per annum. Development of Zimbabwe's biofuel sector has been slowed due to the absence of a comprehensive policy on biofuels.

General Information:

Policy and Programs

A draft biofuels policy, developed by the Director for Bio-fuels in the Ministry of Energy and Power Development, was recently submitted for ministerial approval. Prior to this, a white paper on 'Principles for Biofuels Development and Use' was presented to Cabinet in 2007, and was the only policy document used to guide the Zimbabwean government's efforts to support the development of the production, distribution and marketing of biofuels. The approval process of the new biofuel policy is not clearly defined, but according to media speculation, the new policy should be finalized in 2012.

The current policy states that *Jatropha curcas* and sugarcane will be the feedstocks promoted to process biodiesel and ethanol, respectively. Both jatropha and sugarcane do not threaten food security in Zimbabwe. A major change contained in the draft policy is the additional discussion of food versus energy security. The new draft policy on bio-fuels permits for the promotion of alternative feedstocks, which include sorghum for ethanol and the oilseeds like soybeans, sunflowers and cottonseed for biodiesel. The assumption is that by encouraging the production of these alternative crops for bio-fuels, biofuels production will increase and support the Zimbabwean economy by creating jobs and weakening Zimbabwe off its dependence on petroleum imports. The policy on biofuels, once approved, is expected to lay the framework that will regulate and promote investment, production, marketing, and the use of biofuels.

Social benefits to sugarcane producers have been addressed in the draft policy through the sugar cane pricing agreement that will ensure that farmers benefit from the whole value chain (i.e. from sugar, ethanol and bagasse). The draft policy also proposes the removal of taxes (e.g. carbon tax) on ethanol and recommends the duty-free importation of equipment to encourage investment in the sector. In 2001, a carbon tax was introduced in Zimbabwe to address the issue of carbon emissions caused mostly by increased traffic density and rapid urbanization. The average carbon tax for heavy and light vehicles is $15 per year calculated according to the engine capacity of the car.

The Southern Africa Development Community (SADC) has also formulated an Energy Protocol which aims to harmonize regional laws and policies on energy. The SADC draft biofuels policy advocates consultation, participation and consensus by relevant stakeholders in the policy making process. The Zimbabwe government intends to comply with the SADC biofuels policy, although the country has

made significant efforts to promote biofuel production without a national-level biofuels policy.

A significant change in the fuel sector is the diversification of fuel procurement. Since 2009, 80 companies are now trading fuel whereas prior to 2009, the National Oil Company of Zimbabwe (NOCZIM), a wholly owned government company, was the sole procurer of petroleum products for the country. To ensure compliance on quality, government intends to legislate on ethanol blending rates based on the European Union and United States standards. Currently Zimbabwe does not blend ethanol in fuel.

Ethanol

The country's ethanol production is anchored on sugarcane as the feedstock of choice. Construction of the $600 million ethanol distillery plant at Chisumbanje in the sugar producing area in south-east of Zimbabwe was completed in September 2011. It is the largest distillery producing anhydrous ethanol (with less than 0.04 percent water content) for biofuel in Zimbabwe, with an expected output of 100 million liters per annum in the first phase. The project is a joint venture between the Agriculture and Rural Development Authority (ARDA), a quasi-government organization, and Green Fuels Private Limited, a private sector investor. Over the next eight years, the target is to increase the area under sugarcane for the production of ethanol to 50,000 hectares. The investors already have planted 5,500 hectares of sugarcane and plan to establish at least another 11,000 hectares of sugarcane by January 2012. About 400 local farmers in the area are expected to put an additional 10,000 hectares under sugarcane as part of an out-grower scheme.

Distribution of the ethanol to processors for blending with petrol has not yet started as there are still some regulatory requirements to be fulfilled. The blending rates are yet to be set but indications are that Zimbabwe will initially consider 10 percent ethanol blended with petrol. However, indications are that the Zimbabwean altitude allows for up to 25 percent ethanol to be blended with petrol without the need for new engines or engine modifications.

Projections are that the ethanol plant will later diversify into the generation of electricity, starting with the production of 18.5 megawatts in 2011 before expanding to 36 megawatts in 2012. The project is expected to consume 30 percent of the power generated with the surplus being committed to national consumption.

In 2009, the two largest sugar mills in Zimbabwe, Triangle Limited and Hippo Valley Estates, producing about 80 percent of Zimbabwe's sugarcane for processing into sugar, restarted production of fuel-grade ethanol after installation of a de-hydration plant at Triangle. The Triangle plant produced about 1 million litres fuel-grade ethanol for blending with petrol, adding to the total potential ethanol production capacity in Zimbabwe.

Biodiesel

Success of the biodiesel program hinges on production of adequate jatropha feedstock. Estimates are,

that in order to meet the 10 percent biodiesel production target, 120,000 hectares of jatropha must be planted. The national biodiesel feedstock production program was previously run and managed by the National Oil Company of Zimbabwe (NOCZIM), a government owned company. The program would have contracted smallholder farmers and communal groups as out-growers for the production of jatropha and NOCZIM was the sole buyer of jatropha seed. However, the jatropha feedstock program has stalled after NOCZIM ran out of funds to continue the program. The current focus on feedstocks has been to widen to include other oilseeds under the new biofuel policy.

The Zimbabwean government is encouraging public-private partnerships (PPP) in the bio-fuels sector. For example, a private company in a 50/50 joint venture with the Reserve Bank of Zimbabwe installed a biodiesel refinery plant on the outskirts of Harare. The plant has an annual production capacity of 35 million liters of biodiesel. Although the biodiesel plant was commissioned in 2007, the plant remains underutilized due to insufficient feedstock production. The plant is currently running at about 10 percent capacity due to the lack of feedstock availability. Consequently, the plant's production has been low and inconsistent for the last 5 years. As a result, the Reserve Bank of Zimbabwe has since pulled out of the 50/50 joint venture with its South Korean partner and has attempted to sell its 50 percent stake in the venture.